

## CLAIMS

What is claimed is:

1. A method for management of a network, comprising:

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receiving a new set of indicators corresponding to a node in the network, wherein the new set of indicators includes functional characteristics of the node, wherein each indicator of the new set of indicators corresponds to a particular functional characteristic;

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storing the new set of indicators in a database, wherein the database includes sets of indicators corresponding to at least one additional node in the network; and

utilizing the database including the new set of indicators to perform network management functions.

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2. The method of claim 1, wherein each set of indicators includes indicators in a predetermined arrangement, wherein position in the predetermined arrangement corresponds to representation of a functional characteristic.

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3. The method of claim 2, wherein each set of indicators further comprises a bit mapped value, wherein each bit location in the bit mapped value corresponds to representation of a functional characteristic.

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4. The method of claim 1, wherein each set of indicators includes indicators indicating functional support at multiple hierarchical levels within a node to which the set of indicators corresponds.

5. The method of claim 4, wherein the multiple hierarchical levels include at least a portion of a set of levels, wherein the set of levels includes a node level, a shelf level, a

card level, a port level, and a circuit level.

6. The method of claim 1, wherein the set of indicators further includes physical characteristics of the node.

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7. The method of claim 1, wherein performing network management functions further comprises determining routing paths in the network.

8. The method of claim 1, wherein performing network management functions  
10 further comprises configuring path endpoints in the network.

9. The method of claim 1, wherein the network is a communications network that includes one or more of Time Division Multiplexing, Frame Relay, asynchronous transfer mode, and wireless network formats.

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10. A method for communicating a set of characteristics of a node in a communications network, comprising:

determining functional characteristics for the node;

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generating a set of indicators corresponding to the functional characteristics, wherein each indicator of the set of indicators corresponds to a particular functional characteristic; and

10 combining the set of indicators with physical characteristic information of the node to produce the set of characteristics for the node.

11. The method of claim 10, wherein generating the set of indicators further  
15 comprises generating a bit mapped set of indicators, wherein each bit of the bit mapped set corresponds to a functional characteristic.

12. The method of claim 11, wherein generating the set of indicators further  
20 comprises generating the set of indicators based on a bit map template used by a network management device in the communications network.

13. A method for performing network management functions in a communications network that includes a plurality of nodes, comprising:

determining functionality of at least a portion of the plurality of nodes and  
5 component entities of the at least a portion of the plurality of nodes based on a database of bit mapped indicator sets, wherein the at least a portion of the nodes in the communications network are represented by corresponding bit mapped indicator sets, wherein each bit mapped indicator set indicates functional characteristics for a corresponding node;

10 when functionality of the plurality of nodes is not fully characterized by the database, determining functionality of a remainder portion of the plurality of nodes based on node types corresponding to nodes included in the remainder portion of the plurality of nodes; and

15 performing network management functions based on functionality of the plurality of nodes as determined.

14. The method of claim 13, wherein performing network management functions  
20 further comprises determining routing paths in the communications network.

15. A network management processor, comprising:

a processing module; and

5 memory operably coupled to the processing module, wherein the memory includes operating instructions that cause the processing module to:

store a received new set of indicators in a database, wherein the new set of indicators corresponds to a node in a network, wherein the database includes  
10 indicators corresponding to at least one additional node in the network, wherein the new set of indicators includes functional characteristics of the node, wherein each indicator of the new set of indicators corresponds to a particular functional characteristic; and

15 perform network management functions based on the database including the new set of indicators.

16. The network management processor of claim 15, wherein each set of indicators includes indicators in a predetermined arrangement, wherein position in the  
20 predetermined arrangement corresponds to representation of a functional characteristic.

17. The network management processor of claim 16, wherein each set of indicators further comprises a bit mapped value, wherein each bit location in the bit mapped value corresponds to representation of a functional characteristic.

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18. The network management processor of claim 15, wherein each set of indicators includes indicators indicating functional support at multiple hierarchical levels within a node to which the set of indicators corresponds.

19. The network management processor of claim 15, wherein performing network management functions further comprises determining routing paths in the network.

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20. A network management processor for performing network management functions in a communications network that includes a plurality of nodes, comprising:

a processing module; and

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memory operably coupled to the processing module, wherein the memory includes operating instructions that cause the processing module to:

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determine functionality of at least a portion of the plurality of nodes and component entities of the at least a portion of the plurality of nodes based on a database of bit mapped indicator sets, wherein the at least a portion of the nodes in the communications network are represented by corresponding bit mapped indicator sets, wherein each bit mapped indicator set indicates functional characteristics for a corresponding node;

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when functionality of the plurality of nodes is not fully characterized by the database, determine functionality of a remainder portion of the plurality of nodes based on node types corresponding to nodes included in the remainder portion of the plurality of nodes; and

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perform network management functions based on functionality of the plurality of nodes as determined.

21. The network management processor of claim 20, wherein performing network management functions further comprises determining routing paths in the communications network.

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